

**Informática Teórica**

(IF689)

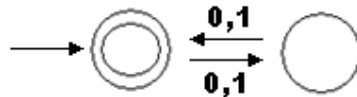
2º Semestre de 2009

1ª Mini-Prova

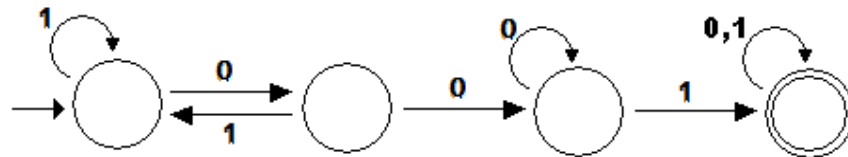
18 de Agosto de 2009

1. (0.5) Determine os AFDs que reconhecem as linguagens, Considere  $\Sigma = \{0, 1\}$ :

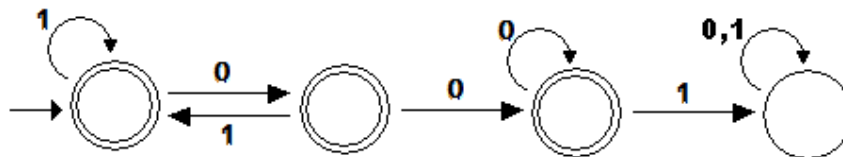
a.  $L1 = \{w \mid w \text{ tem tamanho par}\}$ ;



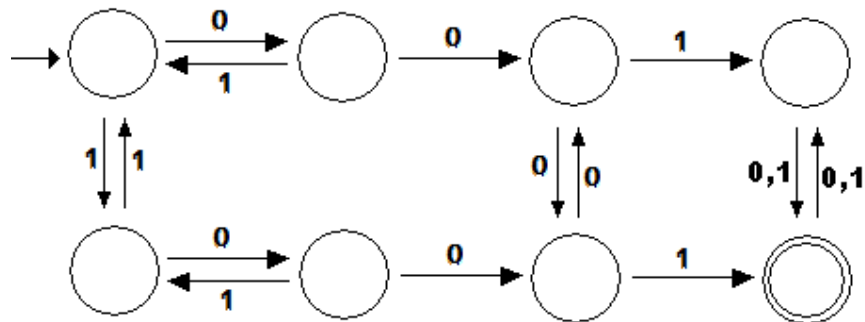
b.  $L2 = \{w \mid w \text{ tem } 001 \text{ como subcadeia}\}$ ;



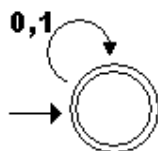
c.  $L3 = \overline{L2}$ ;



d.  $L4 = L1 \cap L2$ ;



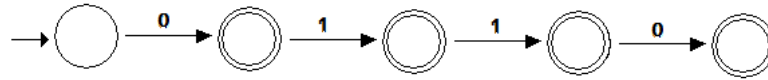
e.  $L5 = L2 \cup L3$ .



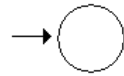
2. (0.5) Determine os AFNs que reconhecem as linguagens Considere  $\Sigma = \{0, 1\}$ :

a. Construa estes AFNs com o menor número de estados e transições.

i.  $L1 = \{0, 01, 011, 0110\}$ ;

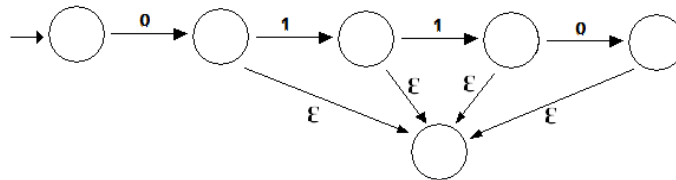


ii.  $L2 = \{w \mid w \text{ tem mais de um } 0 \text{ e menos de dois } 0\text{'s}\}$ ;

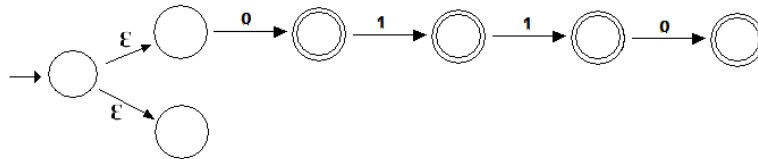


b. Construa estes AFNs usando os algoritmos.

i.  $L3 = L1 \circ L2$



ii.  $L4 = L1 \cup L2$



iii.  $L5 = L2^*$

